

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PCT APPLICATION

Applicant: Corning Incorporated)

: RESPONSE TO WRITTEN OPINION

Serial No.: PCT/US99/18933 )

Filing Date: 20 August 1999)

For: RADIALLY VARYING AND  
AZIMUTHALLY ASYMMETRIC  
OPTICAL WAVEGUIDE FIBER

Assistant Commissioner of Patents and Trademarks

Box PCT

Washington, D.C. 20231

Dear Sirs:

Please cancel, without prejudice, original claims 1-8 and replace them with claims 1-4 as set forth on the attached substitute sheets. Please cancel claim 14 without prejudice.

Remarks

The written opinion states claims 1-7 are anticipated by Bassett, WO 89/11109. This reference has been overcome by canceling claims 1-8 and replacing them with claims 1-4 which recite an asymmetrical core having at least two sets of diagonally opposed sectors. A first set of sectors has a first profile type and the second set of sectors has a second profile type.

The new independent claim, is a broader version of original claim 8 which was identified in the written opinion as meeting the criteria set out in PCT Article 33(2)-(4).

Support for the broadening of claim 8 is found in the original specification as follows. At page 4, lines 9-13, the specification describes a core cross section having a number of sectors (see definition of sector at page 2, lines 13-21). Original claim 8 and the discussion in the specification thereof recites diagonally opposed sectors. At page 6, lines 6-11, the specification describes a core cross section having a number of sectors, the sectors having a step, rounded step, or  $\alpha$ -profile, without limiting the relative size or volume of the sectors. Thus no new matter is introduced in the broadening of claim 8. The new dependent claims 2 and 3 add the limitations, which are found in claim 8. New independent claim 4 allows the pairs of diagonal sectors to have different profile widths as shown in Fig. 1a, which is described at page 6, lines 1-5.

The written opinion asserts claims 9-14 lack inventive step over Basset, WO 89/11109, in view of US patent 4,758,066, Someda ('066).

Applicant traverses this assertion by noting that claims 9-14 are drawn to a waveguide fiber having more than one annular region or a more complex region in a sector. Someda '066 teaches a sector having a uniform refractive index. One may look upon such a sector as being a single annulus in contact with the central portion of the core.

Claim 9 recites sectors each having three annular regions. The references, Basset and '066, taken together or separately do not teach or suggest a waveguide fiber having more than one annular region in a core sector. In addition, the references do not teach or suggest the additional limitation in claim 9 that recites embedded volumes in the sectors.

Claim 10 recites a waveguide-like structure ( "...a volume of a first glass of constant refractive index embedded in a volume of a second glass of constant refractive

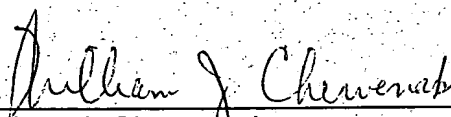
index...refractive index of the first glass is than the refractive index of the second glass.") The references Basset and '066 do not teach or suggest a core having such a structure contained therein. Claim 11 depends from claim 10.

Claim 12 is similar to claim 10 in that claim 12 also recites a waveguide embedded in the sectors. In the case of claim 12 the structure of the embedded waveguide is more complex than that of claim 10. Claim 13 depends from claim 12.

Claim 14 has been canceled without prejudice.

Submitted herewith are replacement pages 12, 13 and 15.

Respectfully submitted,

  
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